

## 202201UECM3473OE2b

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<b>Time taken</b>	10 secs
<b>Grade</b>	0 out of a maximum of 10 (0%)

1

Marks: 1

An insurance company is determining limited fluctuation credibility standards for its automobile losses. You are given the following information:

- The company selects all of its credibility standards to be the number of claims at which there is a 99% probability that the observed amount is within 5% of the mean.
- The standard for full credibility for aggregate loss is 16,404 claims.
- claim frequency follows a Poisson distribution.
- Claim frequency and claim severity are independent.

Calculate the limited-fluctuation credibility standard for claim severity. \_\_\_\_\_

Answer:

✗

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Incorrect

Correct answer: 13749.6896

Marks for this submission: 0/1.

2

Marks: 1

Aggregate claims per period have a compound Poisson distribution.

You have determined that the number of claims for full credibility is 4,200 claims.

It is then discovered that an incorrect value of the coefficient of variation for the severity distribution was used to determine the full credibility standard.

The original coefficient of variation used was 0.4354, but the corrected coefficient of variation is 0.6322. Find the corrected number of claims for full credibility. \_\_\_\_\_

Answer:

✗

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Incorrect

Correct answer: 4941.808479

Marks for this submission: 0/1.

3

Marks: 1

An insurance coverage involves credibility based on number of claims only. A full credibility standard is determined so that the number of claims is within 4% of the expected 98% of the times. For a particular group, 803 claims have been observed. Determine an appropriate credibility factor, assuming that the number of claims is Poisson distributed. \_\_\_\_\_

Answer:

✗

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Incorrect

Correct answer: 0.4873

Marks for this submission: 0/1.

4

Marks: 1

The average claim size for a group of insureds is 1,900 with standard deviation 8,000. Claim count follows a Poisson distribution. The standard for full credibility is that the total loss should be within 5% of the expected total loss with probability 99%. We observe 5,300 claims and a total loss of 1,800,000 for a group of insureds. If our prior estimate of the total loss is 1,690,000, determine the limited fluctuation credibility estimate of the total loss for the group of insureds.

Answer:

✗

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Incorrect

Correct answer: 1725915

Marks for this submission: 0/1.

5

Marks: 1

You are given:

- Claim counts follow a Negative Binomial distribution with parameters  $r = 4$  and  $\beta = 0.58$ .
- Claim sizes follow a lognormal distribution with coefficient variation 5.800000000000001.
- Claim sizes and claim counts are independent.
- The number of claims in the first year was 1,440.
- The aggregate loss in the first year was 8,230,000.
- The manual premium for the first year was 4,270,000.
- The exposure in the second year is identical to the exposure in the first year.
- The full credibility standard is to be within 8.30% of the expected aggregate loss 95% of the time.

Determine the limited fluctuation credibility net premium for the second year. \_\_\_\_\_

Answer:

✗

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Incorrect

Correct answer: 5342368

Marks for this submission: 0/1.

6

Marks: 1

Claim frequency follows a Poisson distribution. The coefficient of variation for claim severity is 3.3. The methods of limited fluctuation credibility are used, with a standard of aggregate losses being within 9% of expected losses 95% of the time. Determine the number of expected claims needed for 8.305% credibility. \_\_\_\_\_

Answer:

✗

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Incorrect

Correct answer: 38.894505

Marks for this submission: 0/1.

7

Marks: 1

You are given:

- Number of claims follows a Binomial distribution with parameters  $m$  and  $q = 0.32$ .
- The standard for full credibility is set so that the actual aggregate are within 6.10% of expected losses 95% of the time.
- 4570 expected claims are required for 47% credibility.

Answer:

✗

[Make comment or override grade](#)

Incorrect

Correct answer: 4.3998

Marks for this submission: 0/1.

8

Marks: 1

You are given:

- The losses  $X_j$ ,  $j = 1, \dots, 9,360$ , are available for a particular policyholder.
- It is reasonable to assume that the  $X_j$ 's are independent and compound negative binomially distributed with negative binomial parameters  $r = 2$  and  $\beta$ .
- $\beta$  varies and follows a uniform distribution on  $[0, 6.6]$ .
- Claim sizes follow a Parato distribution with  $\theta$  unknown and  $\alpha = 4.0$ .
- Claim sizes and claim frequency are independent.

Determine the partial credibility factor if the full credibility standard is to be within 2% of the expected aggregate losses 95% of the time. \_\_\_\_\_

Answer:

X

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Incorrect

Correct answer: 0.818554

Marks for this submission: 0/1.

9

Marks: 1

For an insurance portfolio, you are given the following:

- The number of claims for each insured follows a Poisson distribution.
- The mean claim count for each insured varies. The distribution of mean claim counts is a gamma distribution with  $\alpha_1 = 0.4$  and  $\theta_{\_1} = 8$ .
- The size of claims for each insured follows a Pareto distribution with parameters  $\alpha_2 = 6$  and  $\theta_2 = 7000$ .
- The credibility standard is that the aggregate claims must be within 10% of the expected number of claims P% of the time.
- 2605 claims were observed and 86% credibility was assigned to this experience.

Determine P. \_\_\_\_\_

Answer:

X

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Incorrect

Correct answer: 93.275006

Marks for this submission: 0/1.

10

Marks: 1

An insurance portfolio has two types of risk, A and B. 50% of the insureds are of type A and 50% are of type B. You are given:

	Number of claims		Size of claims	
		Standard		Standard
Type	Mean	deviation	Mean	deviation
A	0.13	0.12	5	5
B	0.23	0.15	6	5

Given the type of risk, number of claims and size of claims are independent. The methods of limited fluctuation credibility are used, with a standard for full credibility of expected aggregate claims being within 9% of actual aggregate claims 95% of the time. Calculate the credibility given to 301 claims. \_\_\_\_\_

Answer:

X

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Incorrect

Correct answer: 0.8343

Marks for this submission: 0/1.

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